REMARKS

For convenience in responding to the rejections in the Action, the headings used in the Action are used below.

Claim Rejections - 35 USC § 112

Claims 9-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The position of the Office is that the limitation "the main solvents" lacks antecedent basis and that the term "main" is a relative term, i.e., does not have a precise meaning.

The rejection relating to the lack of antecedent basis has been overcome by the above amendments to the claims in which the term "the" has been changed to --a--.

Regarding the rejection relating to the meaning of "main solvents", it is noted that claims 10, 12, 14, and 16 have been canceled. In claims 9, 11, 13 and 15, the expression "the main solvents" has been amended to --a main solvent--. Applicants respectfully submit that the term "main" is not relative and would be understood by a person of ordinary skill in the art to have its common meaning as "the largest part", i.e., more than 50%, i.e., that the terminology "a main solvent" means that the total amount of γ-butyrolactone and sulfolane is more that 50% of the total solvents. This understanding is supported by Example 1 of the

specification in which the solvent is a 30 : 70 mixture of sulfolane and γ-butyrolactone.

That the terminology "main solvent" in the claims of a U.S. patent is considered definite is also evidenced by the fact that a search of the USPTO database for the terminology "main solvent" in the claims of U.S. patents developed 48 "hits". See, for example, U.S. Patent No. 6,534,957 which uses the terminology "a main solvent of an electrolyte mixture".

Removal of the 35 U.S.C. § 112 rejection is believed to be in order.

Claim Rejections - 35 USC § 102/103

Claims 1, 3, 5, 7, 9, 11, 13 and 15 are rejected under 35 U.S.C. 102(b)/103(a) as being anticipated by, and alternatively unpatentable over, Hatazaki et al., U.S. 2001/0038949 (hereinafter: "Hatazaki"). Claims 2, 4, 6, 8, 10, 12, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatazaki. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatasaki in view of Kameda et al., U.S. Patent No. 6,632,569 (hereinafter: "Kameda").

The 35 U.S.C. 102(b) rejection of claims 1, 3, 5, 7, 9, 11, 13 and 15 over Hatazaki is believed to be overcome by the above amendment to claim 1 in which the amount of sulfolane has been

limited to the preferred amount of 20 ~ 45 volume %, on the basis of the total volume of the solvent, described in the present specification on page 5, lines 6-9. (Claim 2, which recites an amount of sulfolane of at least 15 % by volume, on the basis of the total volume of the solvent, and the claims dependent thereon, have been canceled).

Hatazaki does not support a rejection of the claims under 35 U.S.C. § 103(a) because a person of ordinary skill in the art would not have been motivated to modify the battery of Hatazaki to increase the amount of sulfolane and the person of ordinary skill in the art could not have reasonably predicted that such modification would have been successful.

First, sulfolane is disclosed only as an "additive" to a nonaqueous solvent and not as a nonaqueous solvent, itself, in Hatazaki.

Second, Hatazaki discloses that the amount of the at least one additive is 0.1 to 10 parts by weight[1]. The at least one additive of Hatazaki must include both a carbonic acid ester and sulfolane if the disclosure of Hatazaki is to be considered relevant to the

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[1]The amount of sulfolane of 20 ~ 45 volume % as now recited in claim 1 is significantly greater than 10 parts by weight of sulfolane as described in Hatazaki because the specific gravity of sulfolane is not large.

nonaqueous electrolyte secondary battery of the present invention. Therefore, the amount of each of the carbonic acid ester type additive and sulfolane must be less than 10 parts by weight.

Third, Hatazaki discloses that if either or both of these additives are used in an amount of more than 10 parts by weight, discharge characteristics are deteriorated. The description that the battery properties are deteriorated if the additives are used in an amount of more than 10 parts by weight "teaches away" from increasing the amount of sulfolane to an amount equivalent to the amount of 20 ~ 45 volume %, on the basis of the total volume of the solvent, now required by the claims of the present application. Obviousness requires that the prior art as a whole provide a teaching, suggestion or motive to modify the art as proposed by the Office. A reference that teaches away from a given combination negates a motivation to modify the prior art to meet the claimed invention. *See, e.g., Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 [77 USPQ2d 1865] (Fed. Cir. 2006). "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Kahn*, 441 F.3d at 990

(quoting *In re Gurley*, 27 F.3d 551, 553 [31 USPQ2d 1130] (Fed. Cir. 1994)) (internal quotation marks omitted).

The court decisions cited by the Office on page 5 of the Action are not applicable to a situation as in the present application where the prior art, i.e., Hatazaki, teaches away from the claimed invention.

Regarding the rejection of claims 17-20, this rejection depends on the propriety of the rejection of the claims, i.e., claims 1, 2, 3 and 5, on which claims 17, 18, 19 and 20, respectively, depend. Claim 18 has been canceled. Claims 1, 3 and 5 have been shown to be patentable. Therefore, claims 17, 19 and 20 are *prima facie* patentable.

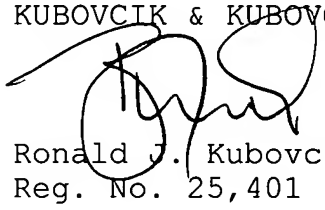
The foregoing is believed to be a complete and proper response to the Office Action dated January 26, 2007, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,

KUBOVCIK & KUBOVCIK



Ronald J. Kubovcik
Reg. No. 25,401

Atty. Case No. SNY-055
The Farragut Building
Suite 710
900 17th Street, N.W.
Washington, D.C. 20006
Tel: (202) 887-9023
Fax: (202) 887-9093
RJK/ff